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159569-0004   Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:	) Group Art Unit: 2162
Brian S. KIM, et al.	) Examiner: **Ly, Anh**
Serial No.: **09/757,435**	) <u>By Fax to Examiner Ly at (571) 273-4039</u>
Filed: **01/10/2001**	)
For: **SYSTEMS AND METHODS OF RETRIEVING RELEVANT INFORMATION**	)

DRAFT SUPPLEMENTAL AMENDMENT
FOR DISCUSSION WITH EXAMINER LY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please enter the following supplemental amendments and remarks in the above referenced matter in response to the Office Action mailed 03/26/07, as follows:

Amendments to the claims begin on page 2.

Remarks begin on page 7.

1764928   - 1 -

1-52 are canceled.

53.   (Previously Amended) A computer-implemented method of ranking the relevancy of pages in a collection of pages including linking hypertext pages, comprising:

crawling the World Wide Web to produce a collection of pages without limitation to topic;

for each page in the collection of pages, examining a probability of visitors viewing a particular page to determine a page weight for said particular page;

for each of a plurality of selected words, with regard to each of a plurality of selected pages in the collection of pages,

determining an intrinsic ranking factor for use of a selected word on a selected page in the collection of pages by examining content related to the selected word on the selected page to determine a content score and adjusting the content score in accordance with the page weight of the selected page, and

determining an extrinsic ranking factor for use of the selected word on the selected page by, for each linking page in the collection of pages containing an outbound hypertext link to the selected page, examining text associated with the outbound hypertext link on the linking page related to the selected word to determine an anchor weight for the linking page, adjusting the anchor weight in accordance with the page weight of the linking page and combining the adjusted anchor weights for all linking pages containing an outbound hypertext link to the selected page;

ranking the selected page for the selected word by combining the intrinsic and extrinsic ranking factors related thereto; and then

creating a database of the collection of pages indexed by the plurality of selected words, each indexed selected word in the database index associated with pages ranked for said each indexed selected word so that ranked search results are produced in response to a subsequent query which includes one or more of the selected words.

54.   (Previously Presented) The invention of claim 53, further comprising:

indexing the collection of pages to select the plurality of selected words from the pages in the collection of pages.

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55.   (Previously Amended) The invention of claim 53, further comprising:

re-crawling the World Wide Web without limitation to topic to update the collection of

pages.

56.   (Previously Amended) The invention of claim 53, where determining an extrinsic ranking

factor further comprises:

adjusting the extrinsic ranking factor, for each linking page, for a link weighting factor

weight related to a quantity of outbound links on that linking page to other pages in the collection of

pages.

57-72 are canceled.

73.   (Previously Amended) The invention of claims 54, 55 or 56 wherein determining the

extrinsic ranking factor further comprises:

determining a size of a paragraph in which the selected word is used in the linking page.

74 - 90 are canceled.

91.   (Previously Amended) A computer implemented method of ranking the relevancy of pages

in a collection of pages including linking hypertext pages, comprising:

(a) crawling and re-crawling the World Wide Web without limitation to topic to produce and

maintain a collection of pages representing the World Wide Web;

(b) for each page of the collection of pages including linking hypertext pages, without *a

priori* knowledge of keywords to be used in any particular query, determining

a page weight related to a probability of a user viewing said each page as a result of

viewing the pages in a random fashion in the collection,

a plurality of selected words from said each page unrelated to topic;

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a content score for use of each one of the plurality of selected words on said each page, and

an anchor weight related to the use of said each of the plurality of selected words in association with an outbound link on said each page to another page in the collection;

(c) for each pair of one of the plurality of selected words and a select page having a content score for said one of the plurality of selected words, ranking a relevancy of said selected page for said one of the plurality of selected words, in accordance with a combination of

the content score for the selected word on the selected page adjusted in accordance with the page weighting factor for the selected page, and

the anchor weight for each linking page having an outbound link to the selected page adjusted in accordance with a page weight for said each linking page; and

(d) for each one of the plurality of selected words, collecting the pages ranked for said each one of the plurality of selected words to build a searchable database, indexed in accordance with the plurality of selected words, so that a ranked set of search results pages is produced by searching the database in response to the particular query for the ranked selected words corresponding to the keywords in the query.

92.   (Currently Amended) The method of claim 91 wherein ranking a relevancy further comprises:

further adjusting the said anchor weights for each linking page in accordance with the number of outbound links on that linking page.

93, 94 are canceled.

95.   (Previously Amended) The method of claim 91 further comprising:

adjusting the ranking in accordance with a proximity between at least two of the plurality of selected words.

96.   (Previously Amended) The method of claim 91 further comprising:

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adjusting the ranking in accordance with a word order between the at least two of the

plurality of selected words.

97.   (Currently Amended) A computer-implemented method of ranking the relevancy of-pages in

a collection of pages including linking hypertext pages, comprising:

crawling the Web to produce a collection of pages without limitation to topic;

selecting words from the pages of the collection of pages without *a priori* knowledge of

keywords in a query;

ranking the pages in the collection of pages for the selected words by, for each of the selected

words with regard to each of the selected pages,

determining an intrinsic ranking factor by examining content related to the selected

word on the selected page to determine a content score and adjusting the content score in accordance

with a page weight of the selected page,

determining an extrinsic ranking factor for use of the selected word on the selected

page by, for each linking page in the collection of pages containing an outbound hypertext link to the

selected page, examining text associated with the outbound hypertext link related to the selected

word to determine an anchor weight for the linking page, adjusting the anchor weight in accordance

with a page weight of the linking page and combining said adjusted anchor weights for all linking

pages containing an outbound hypertext link to the selected page, and

ranking each selected page for each selected word by combining the intrinsic and

extrinsic ranking factors related thereto; [[,]] and

creating a searchable data structure [[of]] related to the pages in the collection of pages

indexed in accordance with the selected words, each indexed word associated with pages ranked for

each such indexed word so that search results provided in response to the query are already ranked in

accordance with relevance to the query.

98, 99 canceled.

100.   (Currently Amended) The method of claim [[99]] 97 wherein ranking each selected word for each selected page by combining the intrinsic and extrinsic ranking factors related thereto the pages further comprises:

adjusting the anchor weight for each such linking page in accordance with a link weight based on other outbound links on such linking page.

101.   (Currently Amended) A computer-implemented method of ranking the relevancy of pages in a collection of pages including linking hypertext pages, comprising:

(a) determining a set of words used on a selected page to be ranked in a collection of pages;

(b) determining an intrinsic ranking factor for the selected page for each word in the set of words by determining a content score for use of the selected word on the selected page and adjusting the ranking for a page weight associated with the page being ranked;

(c) determining an extrinsic ranking factor for remaining pages in the collection of pages for use of said each word in association with an outbound link to the selected page by determining an anchor weight for the page being ranked and adjusting the ranking for a page weight associated with the page being ranked;

(d) repeating (a) through (c) for all pages in the collection of pages; and

(e) forming an index entry for each word in all the sets of words, each index entry including a list of the pages in the collection of pages using the word being indexed having the highest combined rankings for

1) the intrinsic ranking factor for use of the word being indexed on the page being listed and

2) the extrinsic ranking factor for use of the word being indexed in association with pages having an outbound link to the page being listed.

102.   (Currently Amended) The method of claim 101 wherein (c) further comprises:

further adjusting the extrinsic ranking factor for a link weight associated with other outbound links on the page being ranked.

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REMARKS

Claims 98, 99 have been canceled. Claims 53-56, 73, 91, 92, 95-97, 100 and 101 remain pending.

Applicants note with appreciation that claims 53-56, 73, 91, 92, 95 and 96 have been indicated to be allowable. Claims 98 and 99 have been canceled. Independent claims 97 and 101 have been amended to include limitations to determining, and combining, intrinsic and extrinsic ranking factors. Dependent claims 98 and 102 have been amended to claim adjusting the ranking in accordance with a link weight.

Applicants respectfully request that any remaining rejections be reconsidered in light of the amendments and arguments presented herein and the case be passed to issue.

Respectfully submitted,

Dated: <u>October 15, 2007</u>   By: /Norman E. Brunell Reg. No. 26,533/
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